

Indiana Traffic Safety Facts 2003

Occupant Protection

<http://www.in.gov/cji>

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Restraint Use Laws

In Indiana, all front seat occupants and children under the age of 12 in passenger cars are required to wear a safety restraint while the vehicle is in forward motion. In 1998, Indiana passed a primary enforcement law for seat belts allowing law enforcement officers to stop a vehicle and write a citation based on a seat belt violation. Seat belt law violators may be fined up to \$25, and if the citation includes a child passenger restraint violation, eight points may be assessed on the driver's record (through 6/30/05). As of 7/1/05, points may no longer be assessed against the driver.

Occupants are exempt from safety restraint laws in the following situations: medical reasons; children covered by Restraint System Laws (IC 9-19-11); commercial or U.S. Postal Service delivery vehicles; newspaper route carriers or bundle haulers; driver examiners; and vehicles not classified as passenger motor vehicles. Indiana Code excludes trucks, tractors and recreational vehicles in the definition of a passenger motor vehicle for the purposes of passenger restraint systems.¹ Indiana's current child restraint law covers children under the age of four, but those children are exempt from the law while passengers in one of the following: school bus; taxicab; rental vehicle leased for 30 days or less; ambulance; out of state vehicle unless operated in Indiana for more than 60 days; public passenger bus; a vehicle owned or leased by a religious or not-for-profit organization that carries more than nine individuals; antique motor vehicle; motorcycle; law enforcement vehicle; or any motor vehicle that is being used in an emergency.²

Indiana and Georgia are the only two states in the nation that have primary seat belt laws that exclude truck occupants. In Georgia, all occupants under the age of 18 are required to be restrained in all vehicle types, but in Indiana, children over the age of three can legally travel in a truck (including the pickup truck bed) without a safety restraint. Unrestrained occupants are at a greater risk of fatal and severe injuries and can also become a projectile in the event of a crash. An unrestrained 150-pound person involved in a 40 mph crash will be thrown with the force of 6,000 pounds and could crush other occupants of the vehicle.

Restraint System Use

The results of the *Indiana Roadside Observation Survey of Safety Belt Use and Motorcycle Helmet Use in Indiana, June 2003* depicted an overall statewide seat belt usage rate of 82.3 percent for front seat, outboard occupants. This represented a 10.1 percent increase from the 72.2 percent usage rate recorded in September 2002. Occupants of passenger cars were properly restrained in 88.3 percent of the observations, compared to only 56.6 percent of pickup truck occupants. The lowest seat belt usage rate recorded (52.1 percent) was for occupants of pickup trucks on rural collector roads.

Gender differences found in the survey were consistent with findings of previous years; females typically have higher seat belt use rates than males. Female drivers had an unweighted usage rate of 89.8 percent and male drivers had an unweighted usage rate of 76.4 percent. Nearly one out of four male drivers observed in the June 2003 survey was not wearing a seat belt. For male drivers of pickup trucks, the percentage was much lower at 54.2 percent. Female front seat passengers had a usage rate of 88.2 percent, compared to the 75.5 percent observed for male front seat passengers.

The data provided in Table 1 illustrates restraint use by gender among killed occupants of cars, minivans, SUVs, large vans and trucks in 2003 crashes. Consistent with the observational survey data, the percent of unrestrained male occupants fatally injured in vehicle

¹ Information gathered from the Indiana Code (IC 9-19-10-1 Passenger Restraint Systems).

² Information gathered from the Indiana Code (IC 9-19-11-1 Passenger Restraint Systems for Children).

crashes (52.3 percent) was higher than the percent of killed female occupants unrestrained at the time of their crash (35.3 percent). The gender gap is most obvious in the 16–20-year-old age group where 60.0 percent of males were unrestrained and 50.0 percent of females were unrestrained. Although the rates for non-restraint use are lower for the younger age groups, it is still very sad to see that 6 child passengers under the age of 10 were unrestrained and killed in vehicle crashes in 2003. Fatally injured pickup truck occupants had a restraint usage rate of only 22.8 percent, whereas fatally injured occupants of cars, minivans, SUVs and large vans had a restraint usage rate of 54.2 percent.

Table 1. Restraint Use of Occupant Fatalities in Passenger Vehicles by Age for Indiana, 2003

Restraint Use	Age Group (Years)					
	0-4	5-9	10-15	16-20	21+	TOTAL
	Male Occupants					
Restrained	3	2	5	30	118	158
Unrestrained	2	3	2	45	167	219
Unknown	1	0	1	6	34	42
Total Males	6	5	8	81	319	419
% Killed Males Unrestrained*	40.0%	60.0%	28.6%	60.0%	58.6%	58.1%
	Female Occupants					
Restrained	2	1	2	16	105	126
Unrestrained	1	0	1	16	61	79
Unknown	2	1	1	3	12	19
Total Females	5	2	4	35	178	224
% Killed Females Unrestrained*	33.3%	0.0%	33.3%	50.0%	36.7%	38.5%

(Occupants = Drivers and Passengers)

*Percent unrestrained excludes unknown restraint use.

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Restraint System Effectiveness

Research indicates that wearing a safety restraint reduces the chance of fatal injury in a motor vehicle crash by 45–73 percent, depending on seating position and vehicle type.³ Seat belts increase the chance of surviving a crash, but they can also aid in the prevention of serious crashes. In a sudden swerve, a restrained driver will remain correctly positioned behind the steering wheel and be better able to maneuver the vehicle, but an unrestrained driver could be thrown to one side, lose control of the vehicle and cause a more serious crash.

One of the most injurious events to occur in a vehicle crash is ejection. In Indiana's fatal crashes of 2003, 75.9 percent of occupants who were totally ejected from the vehicle were killed. Among fatal crashes where restraint use was known, 94.8 percent of people completely thrown out of their vehicle were unrestrained.

³ Information from The Economic Impact of Motor Vehicle Crashes 2000 on the NHTSA website, <http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Communication%20&%20Consumer%20Information/Articles/Associated%20Files/EconomicImpact2000.pdf>

Children

Even though Indiana law does not require it, best safety practice would be to keep children in a booster seat until the vehicle's seat belt fits them properly (usually 4'9" or 80 lbs.). This is because vehicle manufacturers design their safety restraint systems to accommodate an average-size adult. Careful review of an owner's manual reveals that the use of child safety seats and booster seats are necessary to safely restrain child occupants. Currently in Indiana, once children reach the age of four, they are no longer required to be in a child safety restraint device. A child wearing a lap and shoulder belt could be in serious danger if the belt is not correctly positioned. Since the child's knees do not bend over the edge of the vehicle's seat, he/she will slouch down allowing the legs to bend properly and the vehicle lap belt will ride up. In this position, soft tissue and internal organs, rather than the hipbones, will absorb the impact of the crash. An improperly fitting shoulder belt will not only be uncomfortable for a child (causing many children to put the shoulder strap behind his or her back), during a crash an incorrectly adjusted shoulder belt can cause severe neck and spine injuries, paralysis and death. A booster seat can prevent injuries like these from occurring by raising the child up into a proper position and keeping the seat belt positioned over the strongest points of the body, the shoulders and hips.

In Indiana in 2003, 17 child passengers of cars, minivans, SUVs, large vans and trucks, under the age of nine were fatally injured in vehicle crashes (see Table 2). Three children were completely unrestrained and 2 children were wearing seat belts only that in all probability did not fit them properly. An increase in the number of child passenger fatalities is notable from 2002 to 2003. In 2002, 4 children under the age of five were fatally injured in vehicle crashes, and in 2003 there were 11 fatalities for the same age group. NHTSA estimates that 106 lives could have been saved in this country in 2003 if child safety seat use for children under the age of five was at 100 percent.⁴

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Table 2. Children Fatally Injured in Passenger Vehicle Crashes by Age and Type of Restraint Used for Indiana, 2003

Restraint System-Use	Up To One Year	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	Total
Not Restrained	0	1	0	0	0	1	1	0	0	3
Lap Belt	0	0	0	0	0	0	0	1	0	1
Lap/Shoulder Belt	0	0	0	0	0	1	0	0	0	1
Child Safety Seat	1	2	0	2	0	0	1	0	0	6
Child Safety Seat Used Improperly	0	1	0	1	0	0	0	0	0	2
Unknown	0	1	1	1	0	1	0	0	0	4
Total	1	5	1	4	0	3	2	1	0	17

⁴ This information was taken from the National Highway Traffic Safety Administration's "Traffic Safety Facts 2002, Occupant Protection." This document is available online at <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2003/809765.pdf>.

Conclusion

Indiana would achieve higher usage rates with a primary seat belt law that included all vehicle types and all occupants in all seating positions. Continuing to exclude vehicles registered as pickup trucks from the seat belt law permits occupants in approximately 25 percent of the registered vehicles on the roadway to legally ride unrestrained. If seat belt use in pickup trucks had been 100 percent, assuming that the use of seat belts reduces fatalities by 45 percent, 35 lives could have been saved in 2003 in Indiana. Restrictions on cargo areas and truck beds alone may have saved 3 lives in Indiana in 2003.

Beginning July 1, 2005, child passengers 0–8 years of age riding in motor vehicles will be required to be properly restrained in a child restraint. From age 8 until age 16, children will be required to ride properly restrained in a child restraint system or a seat belt, regardless of seating position or vehicle type (even motor vehicles plated as trucks). Until that time increasing the awareness of parents to this topic is crucial. They need to understand that an improperly fitting seat belt could kill their child by rupturing internal organs or cause irreparable spinal cord damage.

Although passage of the Indiana child passenger safety bill will make substantial improvements in reducing child fatalities, due to the continuing exemption of pickup trucks and vehicles plated as trucks, a large segment of the population (16+) remains at risk. Safety restraints should be required for everyone inside of a motor vehicle in forward motion on Indiana's roadways. Moreover, exceptions to the child restraint law for out-of-state vehicles, taxicabs and rental vehicles are illogical. Every life is important, no matter what type of vehicle the person is in, or where he or she is sitting in that vehicle.

This publication was prepared on behalf of the Indiana Criminal Justice Institute by Purdue University's Center for the Advancement of Transportation Safety. All information contained within was gathered from the Fatality Analysis Reporting System (FARS) Web-Based Encyclopedia provided by the National Highway Traffic Safety Administration (NHTSA) available online at <http://www-fars.nhtsa.dot.gov>. All figures are considered current as of December 2004. Please direct any questions concerning data in this document to the Center for the Advancement of Transportation Safety, Purdue University, Potter Engineering Center, Room 322, 500 Central Drive, West Lafayette, IN, 47907-2022.